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SMITHKLINE BEECHAM CORPORATION  
CORPORATE INTELLECTUAL PROPERTY-US, UW2220  
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KING OF PRUSSIA, PA 19406-0939

EXAMINER
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DYE, ROBERT C

ART UNIT	PAPER NUMBER
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1791

NOTIFICATION DATE	DELIVERY MODE
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06/10/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

US\_cipkop@gsk.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/576,734	<b>Applicant(s)</b> EBNER ET AL.	
	<b>Examiner</b> ROBERT DYE	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 31-38 and 40-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 44-47 is/are allowed.
- 6) ☒ Claim(s) 31-38 and 43 is/are rejected.
- 7) ☒ Claim(s) 40-42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/04/2009</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This is a non-final Office action in response to Applicant's reply to a non-final Office action on 03/02/2009.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 43 is rejected under 35 U.S.C. 102(e) as being anticipated by Brown, JR. et al. (PG Pub US2004/0177462).

4. Regarding claim 43, Brown et al. (hereinafter Brown) teach a toothbrush with a multi-sectioned head wherein the sections are spaced width ways adjacent to each other, have bristles, and are flexibly linked to the handle (see Fig. 1). The Examiner wishes to point out to applicant that the claim 43 is directed towards a product and as such will be examined under such conditions. Even though product-by-product claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (see MPEP 2113). Although the process of Brown

Art Unit: 1791

involves a second heating step prior to bending rather than immediate bending as with the claimed process, the product produced by each method is substantially the same.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 31-34, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown, JR. et al. (PG Pub US2004/0177462) in view of Knowles (USP 2,789,313).

9. Regarding claim 31, Brown, Jr, et al. (hereafter Brown) teach a method for making a split headed toothbrush comprising a handle and two sections of a brush head spaced widthways adjacent to each other and each section adapted to carry bristles and integrally connected to the handle (see figure 6 and paragraph 30). The method of Brown comprises a step of molding the handle and head sections in an injection molding process wherein the sections are spaced apart from each other (paragraph 39) and a step of moving the two sections closer together (paragraph 43).

10. Brown teaches a method wherein the toothbrush head is made of a thermoplastic material and the sections are moved closer together with the material in a hot malleable state (see paragraphs 42-43). Brown does not teach that the object is shaped while still hot from the injection molding process. In the method of Brown, the toothbrush remains in the mold for a period of time and solidifies (paragraph 40) and Brown teaches that heat must be reapplied to the toothbrush material in order to return the toothbrush to a hot malleable state (paragraph 42) before pressure is applied. However, it is well known in the injection molding art to use the heat of injection to reshape a formed object. For example, Knowles discloses a method for producing an injection molded article wherein plastic is injected into a mold and then immediately reshaped (col 1, lines 50-70).

Art Unit: 1791

11. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the heat of injection and reshape the plastic article as taught by Knowles before said article cooled below the glass transition temperature, thus eliminating the additional step of reheating the article. One would have been motivated to reduce the manufacturing time and energy required to cool and reheat the object being produced.

12. Regarding claim 32, wherein when the sections are moved closer together in a widthways direction, a distortion of the integral link occurs at the junction between the head part of the section and the neck part, Brown teach that the distortion occurs at the link between the head part sections and the neck part (see figure 7 wherein the distortion occurs at head-neck junction).

13. Regarding claim 33, Brown teach that the sections diverge with increasing longitudinal distance (see figure 6) and when the sections are moved closer together, the sections are parallel (see figure 7).

14. Regarding claim 34, Brown teaches that the sections are spaced apart in a direction perpendicular to the bristle direction (see figure 6). The sections are space apart in a widthways direction which is perpendicular to the bristle direction.

15. Regarding claims 37 and 38, wherein the gap between the two sections is less than 0.5mm and the sections are in sliding contact with each other, Brown does not explicitly state the size of the gap between the two sections. However, it is apparent from figures 1, 2, and 4 that Brown intends that the two sections be very close to each other and considering the dimensions of a conventional toothbrush head, the sections

Art Unit: 1791

would be expected to be within the 0.5mm distance. Furthermore, the two sections appear to be touching and would at least be within sliding contact when the sections are flexed. Brown illustrates a small gap between the two sections and a method to close the gap (as discussed in claim 31) and it would have been an obvious matter of design choice for a person having ordinary skill in the art at the time of the invention to choose an appropriate small gap size based on desired aesthetics, brush coverage, or flexibility range.

16. Claim 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown, JR. et al. (PG Pub US2004/0177462) in view of Knowles (USP 2,789,313) as applied to claim 31 above, and further in view of Hegemann (USP 5,407,254, already of record).

17. Regarding claim 35, Brown teaches a method of making a multi-sectioned toothbrush head as described above for claim 31; however, Brown does not teach a method wherein the sections are spaced apart in a direction parallel to the bristle direction. In the same field of endeavor of making toothbrushes, Hegemann teaches a toothbrush wherein the head sections are spaced apart in a direction that is parallel to the bristle direction (see figure 13). The bristles of section 11 run up/down in figure 13 and sections 14 and 16 are spaced apart in the upwards direction with respect to section 11. Thus the spacing is parallel with the bristle direction. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have spaced the sections apart in a direction parallel with the bristle direction as taught by

Art Unit: 1791

Hegemann in Brown for the purpose of simultaneously cleaning the ends and sides of teeth and gums (col 1, line 13-15, and figure 13).

18. Regarding claim 36, Brown teaches a method for making a multi-sectioned toothbrush head as described above for claim 31. The toothbrush of Brown has two sections however and Brown does not teach a method wherein three or more sections are used. In the same field of endeavor of making toothbrushes, Hegemann teaches a toothbrush wherein the head is divided into three sections which diverge about a solid angle at the neck (see figure 1) for the purpose of providing simultaneous cleaning to the ends and sides of teeth and gums (col 1, line 13-15 and figure 13). It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used a brush head with three sections as taught by Hegemann for the purpose of simultaneously cleaning the ends and sides of teeth and gums (col 1, line 13-15, and figure 13).

#### ***Allowable Subject Matter***

19. Claims 40-42 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. Claim 44-47 allowed.

21. The following is a statement of reasons for the indication of allowable subject matter:



Art Unit: 1791

22. Regarding claims 40-42, claim 40 recites a method wherein after the sections have been moved together, they are fixed in the close together relationship by injecting a second fluid plastic material around and/or between a part of the sections to thereby hold the sections together. The prior art of record is represented by Brown, JR. et al. (PG Pub US2004/0177462) and Vrignaud (USP 6,108,852). Brown discloses moving two sections of a toothbrush head together but does not teach or suggest the injection of a second fluid material between or around the two sections to secure them in a close relationship. Vrignaud discloses injecting a second material over two brush head stems and a handle to secure the stems to the handle. Vrignaud differs significantly from Brown in that the two brush head sections are separated from the handle and thus require a means to secure the three parts together. In Brown, the sections and handle are initially molded as one piece and thus, do not require a means to secure the parts together. There is no motivation to inject material between or over the head sections of Brown.

23. Claims 41 and 42 are dependent upon claim 40.

24. Regarding claims 44-47, claim 44 recites an apparatus which comprises a mold cavity for moving at least two sections of a toothbrush head closer together and a means to inject a hot elastomeric material into the mold cavity to flow around and/or between the sections. The prior art of record (Klinkhammer, USP 5,171,066) discloses a mold for moving two sections of a toothbrush head together but does not teach or suggest a means to inject hot elastomeric material into the mold cavity such that it flows

Art Unit: 1791

around and/or in between the split sections. Further, it would have been obvious to modify the apparatus of Klinkhammer to provide a means to inject elastomeric material.

25. Claims 45-47 are dependent on claim 44.

### ***Response to Arguments***

26. Applicant's arguments filed 3/02/2009, with respect to claim 31 have been fully considered but they are not persuasive. The Applicant argues that it would not be obvious to eliminate the second heating step of Brown by immediately shaping the molded part using the heat of injection and that the examiner's conclusion of obviousness is based upon improper hindsight reasoning.

27. Brown teaches that importance of shaping the head sections at a temperature slightly above the glass transition temperature--such is known as a temperature in which a plastic is malleable. Since the plastic is injection molded while in the molten state, it is obviously going to be well above the glass transition temperature and will subsequently cool to the range at which is specified by Brown. Although the method of Brown allows the plastic to further cool thus requiring reheating, Brown does not teach the criticality of first allowing it to cool below the glass transition temperature. It would have been obvious to a person having ordinary skill in the art to eliminate the additional step of reheating by removing the plastic from the mold and reshaping the head section when the plastic is within the desired temperature range disclosed by Brown.

28. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that

Art Unit: 1791

any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). It is well known in the art of injection molding that the heat of injection can be used for reshaping the molded article. As discussed above, Knowles discloses an injection molding method wherein the plastic is injected into a mold cavity and subsequently reshaped before cooling.

29. Applicant's arguments with respect to claims 35 and 36 have been fully considered but they are not persuasive. Applicant argues that Hegemann discloses a toothbrush wherein the sections are broken off and reattached to the toothbrush handle and in requiring such multiple steps, the process is consequently more complex than the claimed process. Thus, one of ordinary skill in the art would not be motivated to employ the teaching of Hegemann.

30. However, the teaching of Hegemann is employed to illustrate a toothbrush head design which as taught by Hegemann, allows for the simultaneous cleaning of the ends and sides of teeth and gums (col 1, line 13-5 and Fig 13). Brown already discloses a method in which a toothbrush head comprising multiple head sections is first molded and then reshaped such that the head sections are brought into a desired position. The combination of Brown in view of Hegemann involves the reshaping of the head sections

Art Unit: 1791

using the method of Brown to a configuration similar to that disclosed by Hegemann; thus allowing for the simultaneous cleaning of the end and sides of teeth.

31. Applicant's arguments, see pg 9, with respect to claims 40-42 have been fully considered and are persuasive. The rejection of claim 40 has been withdrawn.

32. Applicant's arguments, see pg 7, with respect to claims 44-47 have been fully considered and are persuasive. The rejection of claim 44 has been withdrawn.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT DYE whose telephone number is (571)270-7059. The examiner can normally be reached on Monday to Friday 8:00AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph S. Del Sole can be reached on (571)272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCD

/Joseph S. Del Sole/  
Supervisory Patent Examiner, Art Unit 1791